

WHAT IS CLAIMED IS:

1. A breath responsive filter blower for a gas mask, comprising:
a gas mask having a filter port used to provide filtered air;
a blower operatively connected to the filter port of the gas mask, the blower being capable of forcing air to the gas mask; and
a detection and control device operatively connected to the blower which detects a pressure condition within the gas mask and controls operation of the blower.
2. The breath responsive filter blower according to claim 1, wherein an internal motor operates the blower.
3. The breath responsive filter blower according to claim 2, wherein the motor of the blower is driven by a power source.
4. The breath responsive filter blower according to claim 3, wherein the power source is portable.
5. The breath responsive filter blower according to claim 4, wherein the power source is one selected from a group consisting of: a battery, a solar power pack, and an electrochemical reaction pack.
6. The breath responsive filter blower according to claim 3, wherein the power source is connected to a processor.
7. The breath responsive filter blower according to claim 6, wherein the power source is connected to the processor via a conductive element.
8. The breath responsive filter blower according to claim 6, wherein the power source and the processor are integrated to form a single unit.

9. The breath responsive filter blower according to claim 6, wherein the processor and the blower are connected by a coupling.

10. The breath responsive filter blower according to claim 6, further comprising:

a manually adjustable control functionally connected to the processor;

wherein the manually adjustable control transmits operational signals to the blower to supplement signals transmitted to the blower by the processor.

11. The breath responsive filter blower according to claim 1, further comprising:

an outflow valve integrated with the mask which releases air within the mask when the outflow valve is in an open position and retains air within the mask when the outflow valve is in a closed position.

12. The breath responsive filter blower according to claim 11, wherein the outflow valve is in the open position during exhalation.

13. The breath responsive filter blower according to claim 11, wherein the outflow valve is in the closed position during inhalation.

14. The breath responsive filter blower according to claim 11, wherein the detection and control device comprises:

an optoelectric device that detects a position of the outflow valve of the mask.

15. The breath responsive filter blower according to claim 14, wherein the optoelectric device is positioned in the mask at a location suitable for detecting the open or closed position of the outflow valve.

16. The breath responsive filter blower according to claim 14, wherein the optoelectric device and the power source are connected by a coupling.

17. The breath responsive filter blower for a gas mask of claim 14, wherein the optoelectric device detects the outflow valve in the open position, and wherein the optoelectric device transmits a signal to the processor to reduce air flow from the blower upon detecting the open position.

18. The breath responsive filter blower according to claim 17, wherein the processor processes the signal transmitted by the optoelectric device and transmits a signal to the blower.

19. The breath responsive filter blower for a gas mask of claim 18, wherein the signal transmitted by the processor causes the blower to reduce air flow upon detecting the open position.

20. The breath responsive filter blower for a gas mask of claim 14, wherein the optoelectric device detects the outflow valve in the open position, and wherein the optoelectric device transmits a signal to the processor to terminate air flow from the blower upon detecting the open position.

21. The breath responsive filter blower according to claim 20, wherein the processor processes the signal transmitted by the optoelectric device and transmits a signal to the blower.

22. The breath responsive filter blower for a gas mask of claim 21, wherein the processor transmits a signal to the blower to ceases air flow and to terminate the output of power by the power source upon the optoelectric device detecting the open position of the outflow valve.

23. The breath responsive filter blower for a gas mask of claim 14, wherein the optoelectric device detects the outflow valve in the closed position, and wherein the optoelectric device transmits a signal to the processor to increase air flow upon detecting the closed position.

24. The breath responsive filter blower according to claim 23, wherein the processor processes the signal transmitted by the optoelectric device and transmits a signal to the blower upon detecting the closed position.

25. The breath responsive filter blower for a gas mask of claim 24, wherein the optoelectric device detects the outflow valve in the closed position, and wherein the optoelectric device transmits a signal to the processor to activate the blower upon detecting the closed position.

26. The breath responsive filter blower according to claim 1, wherein the detection and control device comprises a pressure sensor positioned inside the gas mask that detects air pressure in the gas mask.

27. The breath responsive filter blower according to claim 26, wherein the pressure sensor detects an absolute air pressure inside the mask.

28. The breath responsive filter blower according to claim 26, wherein the pressure sensor detects an air pressure inside the mask relative to an air pressure of ambient air outside the mask.

29. The breath responsive filter blower according to claim 28, further comprising:

a vent to ambient air, which is integrated with the pressure sensor on the mask and is positioned to sense ambient air pressure

30. The breath responsive filter blower according to claim 26, wherein pressure sensor is connected to the processor, wherein the processor is connected to the power source, and wherein the power source is connected to the blower.

31. The breath responsive filter blower according to claim 30, wherein the pressure sensor detects air pressure in the mask at a high level, and wherein the pressure sensor transmits a signal to the processor to reduce air flow upon detecting the high level of air pressure.

32. The breath responsive filter blower according to claim 31, wherein the processor transmits a signal to the power source to reduce an output of power and to reduce air flow from the blower upon detecting the high level of air pressure.

33. The breath responsive filter blower according to claim 32, wherein the pressure sensor detects air pressure in the mask at a high level, and wherein the pressure sensor transmitting a signal to the processor to terminate air flow from the blower upon detecting the high level of air pressure.

34. The breath responsive filter blower according to claim 29, wherein the processor transmits a signal to the power source to terminate an output of power and to terminate air flow from the blower upon detecting the high level of air pressure.

35. The breath responsive filter blower according to claim 29, wherein the pressure sensor detects air pressure in the mask at a low level, and wherein the pressure sensor transmits a signal to the processor to increase air flow upon detecting the low level of air pressure.

36. The breath responsive filter blower according to claim 35, wherein the pressure sensor detects air pressure in the mask at a low level, and wherein the

pressure sensor transmits a signal to the processor to activate the blower upon detecting the low level of air pressure.

37. The breath responsive filter blower according to claim 36, wherein the processor processes the signal transmitted by the pressure sensor and transmits a readable signal to the power source to activate the blower upon detecting the low level of air pressure.

38. The breath responsive filter blower according to claim 1, wherein the detection and control device comprises:

a pressure sensor positioned inside the gas mask that detects air pressure in the gas mask; and

an optoelectric device is positioned in the mask at a location suitable for detecting the open or closed position of an outflow valve linked to the gas mask, wherein the optoelectric device and the pressure sensor work cooperatively.

39. The breath responsive filter blower according to claim 1, further comprising:

a filter located at an intake portion of the blower;

40. A breath responsive filter blower for a gas mask, comprising:

a gas mask having a filter port used to provide filtered air and an outflow valve having an open position to release air from the gas mask and a closed position to retain air in the gas mask;

a blower operatively connected to the filter port of the gas mask, the blower being capable of forcing air to the gas mask, wherein the blower is operated by a motor driven by a portable energy source;

an optoelectric device disposed in the mask at a location suitable for detecting the open position or closed position of the outflow valve and operatively connected to the blower, wherein the optoelectric detects a pressure condition within the gas mask and controls an operation of the blower; and

a processor connected to the optoelectric device via a first conductive element and connected to the power source via a second conductive element, wherein the processor receives a signal from the optoelectric device to terminate the operation of the blower when the outflow valve is in a closed position and receives a signal from the optoelectric device to activate the operation of the blower air flow when the outflow valve is in a closed position.

41. A breath responsive filter blower for a gas mask, comprising:

a gas mask having a filter port used to provide filtered air;

a blower operatively connected to the filter port of the gas mask, the blower being capable of forcing air to the gas mask, wherein the blower is operated by a motor driven by a portable energy source;

an pressure sensor disposed in the mask and operatively connected to the blower, wherein the pressure sensor detects an air pressure in the mask and controls an operation of the blower; and

a processor connected to the pressure sensor via a first conductive element and connected to the power source via a second conductive element, wherein the processor receives a signal from the pressure sensor to terminate the operation of the blower when the air pressure in the mask is at a high level and receives a signal from the

pressure sensor to activate the operation of the blower air flow when the air pressure in the mask is at a low level.

42. A breath responsive filter blower for a gas mask, comprising:
a gas mask having a filter port used to provide filtered air;
blower means for blowing air to the mask;
power means for providing power to said blower means;
detection means for detecting a pressure condition in the mask and sending a signal containing pressure condition information to control said blower means; and
processing means for processing the pressure condition information signal and transmitting the pressure condition information signal to said blower means, wherein the pressure condition information signal instructs termination of the operation of said blower means for blowing when the air pressure in the mask is at a high level and the pressure condition information signal instructs activation of the operation of said blower means for blowing when the air pressure in the mask is at a low level.